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CALIFORNIA NATIONAL FOREST DISTRICT

Form 406

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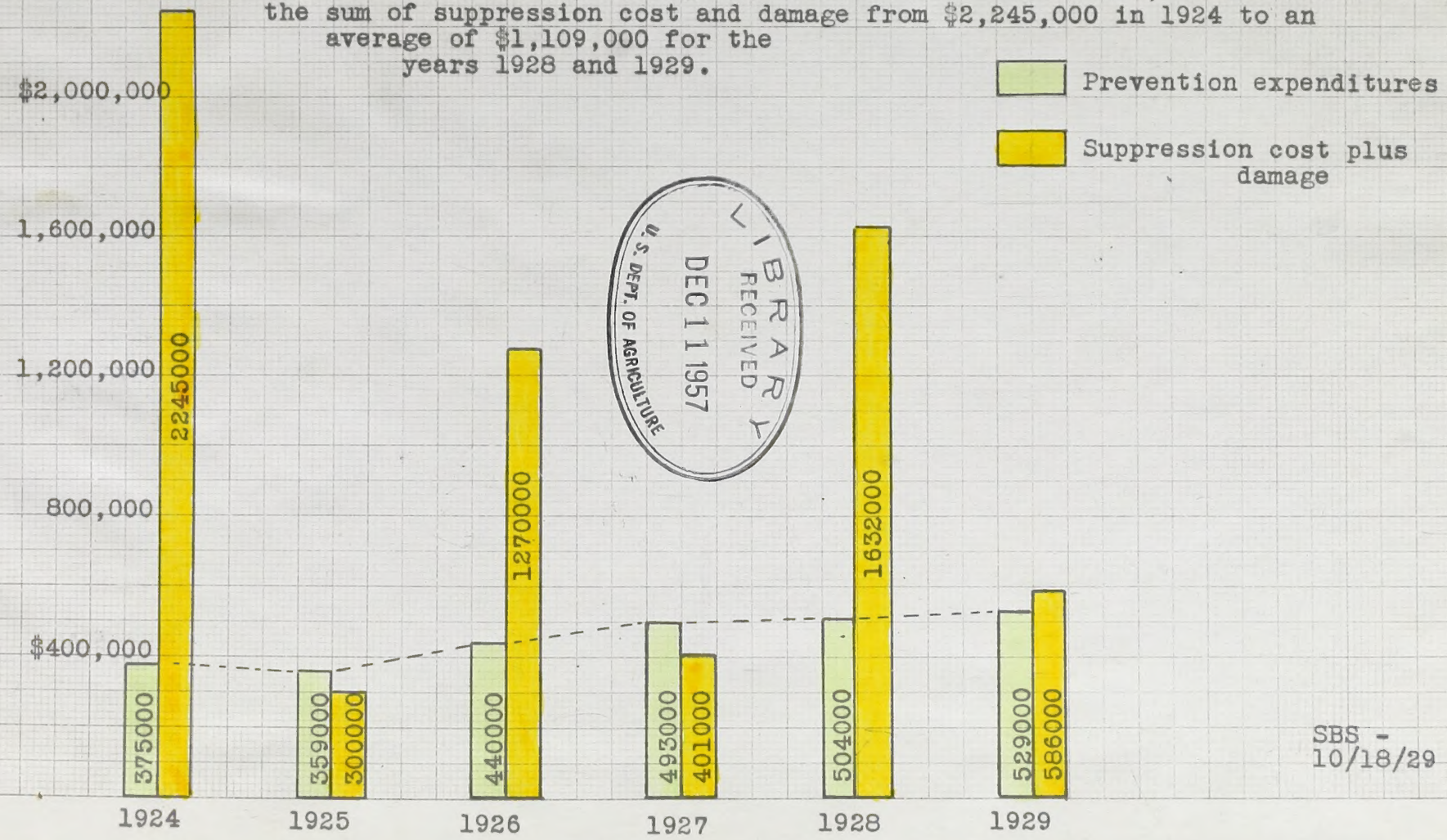
HOW INCREASES IN PREVENTION EXPENDITURES REDUCE SUPPRESSION COSTS AND DAMAGE.

CALIFORNIA DISTRICT

During the past six years there have been four critical fire seasons - 1924, 1926, 1928 and 1929. The other two years, 1925 and 1927, were normal.

Within this period prevention expenditures have been increased about $150,000. This increase, together with improvements in the fire control organization and the greater accessibility through road and trail construction, have reduced the sum of suppression cost and damage from $2,245,000 in 1924 to an average of $1,109,000 for the years 1928 and 1929.



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SBS -
10/18/29

H. W. Wirth, Stat. New York, N. Y.

H. W. Webb, Sta. J. New York, N. Y.

—Negative 2.

RELATION BETWEEN SPEED OF ATTACK AND SIZE OF FIRES.

Curve "A" indicates the percentage of fires that were reached within one hour from time of origin;
Curve "B" the percentage of "C" fires. (A "C" fire is one that becomes ten acres or more in size.)

SBS JHP
10/21/29

63389

Explanation of Shasta Hour Control Map:

The green color represents the area that is already under satisfactory hour control. By this is meant that a member of the fire control organization can reach any fire on the area within the following approximate time limits from its inception:

1. Grass, woodland, brush, yellow pine and mixed conifer types,- ½ hr.

2. Douglas fir and sugar pine-fir types,- 1 hr.

3. Fir and lodgepole types,- 2 hrs.

The yellow color represents the area that is not satisfactorily covered but which, during the past 18 years, has had no appreciable fire business. This may or may not be a temporary condition. We know that in general our fire risk zones are becoming larger, due to increasing use of the Forest areas. No doubt a portion of the area shown in yellow will in time pass into the risk zone shown in dark orange.

The dark orange color indicates the area in the fire business zone that has unsatisfactory hour control. The immediate problem is on this area, and it constitutes 76 per cent of the fire business area of the Forest and 54 per cent of the gross area of the Forest, as shown in the following table:

1. Gross area of Shasta Forest protection unit, - - -		2,361,000 A.
2. Barren and alpine, - - - - - -	93,000	
3. Other areas with no fire business (yellow) - - - -	595,000	688,000 A.
4. Total area of fire business, - - - - - - - - - -		1,673,000 A.
5. Area under satisfactory hour control (green) -		403,000 A.
6. Area needing additional protection (orange) -		1,270,000 A.

Ratio of 6 to 4, - - 76%
Ratio of 6 to 1, - - 54%

Careful analysis has shown that 60 additional men are needed to bring the entire fire business zone under reasonably satisfactory hour control after the proposed road and trail program is completed. This is approximately double the present force.

The green color represents the area that is already under satisfact
hour control. By this is meant that a member of the fire control organizatio
reach any fire on the area within the following approximate time limits from
ignition:

1. Grass, woodland, brush, yellow pine and mixed conifer types,- ½

2. Douglas fir and sugar pine-fir types,- 1 hr.

3. Fir and lodgepole types,- 2 hrs.

The yellow color represents the area that is not satisfactorily cov
but which, during the past 15 years, has had no appreciable fire business. T
may or may not be a temporary condition. We know that in general our fire ri
zones are becoming larger, due to increasing use of the Forest areas. No doub
portion of the area shown in yellow will in time pass into the risk zone show
in dark orange.

The dark orange color indicates the area in the fire business zone
has unsatisfactory hour control. The immediate problem is on this area, and i
constitutes 73 per cent of the fire business area of the Forest and 54 per cen
of the gross area of the Forest, as shown in the following table:

1. Gross area of Ouachita Forest protection unit, - - - 2,351,000 A.

2. Barren and alpine, - - - - - - - 93,000

3. Other areas with no
fire business (yellow) - - - - 538,000 — 638,000 A.

5. Area under satisfactory hour control (green) - — 404,000 A.

6. Area needing additional protection (orange) - 1,270,000 .

Ratio of 3 to 4, - - 75%
Ratio of 5 to 1, - - 34%

Careful analysis has shown that 60 additional men are needed to brin
proposed road and trail program is completed. This is approximately double the

[illegible]ion of Dinsta Hour Control Map:

[illegible]he green color represents the area that is already under satisfact[illegible]
[illegible]. By this is meant that a member of the fire control organizatio[illegible]
[illegible]ire on the area within the following approximate time limits from [illegible]

[illegible]. Grass, woodland, brush, yellow pine and mixed conifer types,- [illegible]

[illegible]. Douglas fir and sugar pine-fir types,- 1 hr.

[illegible]. Fir and lodgepole types,- 2 hrs.

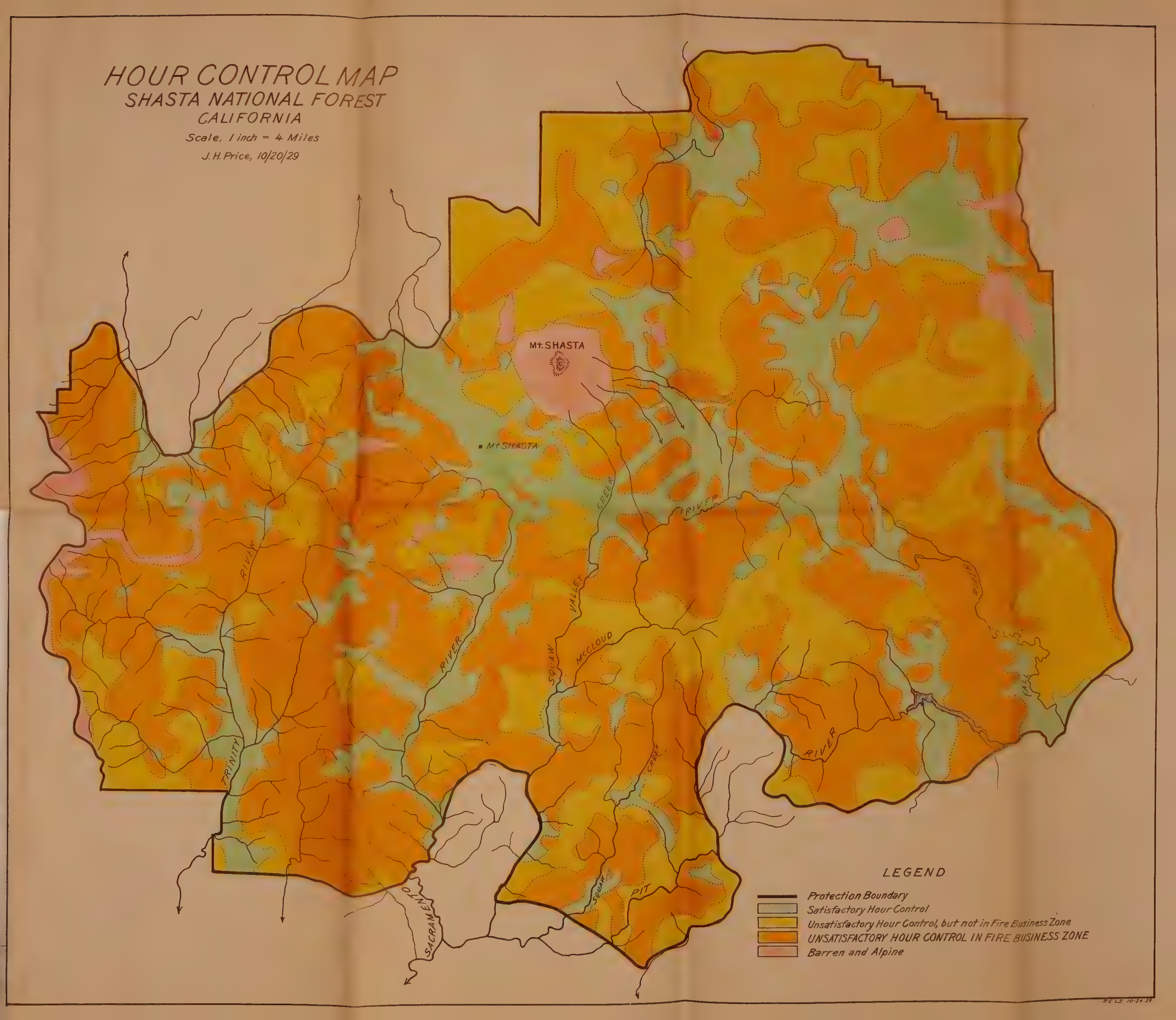
The yellow color represents the area that is not satisfactorily cov[illegible]
but which, during the past 15 years, has had no appreciable fire business. T[illegible]
may or may not be a temporary condition. We know that in general our fire ri[illegible]
zones are becoming larger, due to increasing use of the forest areas. No dou[illegible]
portion of the area shown in yellow will in time pass into the risk zone show[illegible]

The dark orange color indicates the area in the fire business zone [illegible]
constitutes 75 per cent of the fire business area of the forest and be per co[illegible]
of the gross area of the forest, as shown in the following table:

1. Gross area of Dinsta Forest protection unit, - - -		2,351,000 A.
2. Barren and alpine, - - - - - -	95,000	
3. Other areas with no fire business (yellow) - - - -	535,000	630,000 A.
4. Total area of fire business, - - - - - - - - -		1,575,000 A.
5. Area under satisfactory hour control (green) -		405,000 A.
[illegible] -		1,270,000 A.

Ratio of 5 to 4, - - 75%
Ratio of 5 to 1, - - 34%

Careful analysis has shown that 50 additional men are needed to bri[illegible]
the entire fire business zone under reasonably satisfactory hour control after
proposed road and trail program is completed. This is approximately double t[illegible]


HOUR CONTROL MAP
SHASTA NATIONAL FOREST
CALIFORNIA
Scale, 1 inch = 4 Miles
J. H. Price, 10/20/29
Mt. SHASTA
Mt. SHASTA
TRINITY
RIVER
RIVER
SQUAW
VALLEY
McCLOUD
CREEK
RIVER
RIVER
PIT
SQUAW
CREEK
SACRAMENTO
RIVER
PAIT
LEGEND
Protection Boundary
Satisfactory Hour Control
Unsatisfactory Hour Control, but not in Fire Business Zone
UNSATISFACTORY HOUR CONTROL IN FIRE BUSINESS ZONE
Barren and Alpine
RELS 10-24-29

CLARKE-MCNARY LAW - - SECTION 2.
(California)

The timber and watershed zones outside the National Forests in California are characterized by -

1. Low elevations; therefore remote from mitigating influences of snow belts.

2. Long season without precipitation.

3. High temperatures and low humidity; a normal condition every year.

4. Extremely inflammable cover.

5. Many communities openly favor light burning and are passive toward incendiarism.

The combined result of these factors is to make protection extremely difficult. All years are bad fire years.

The funds provided for protection have permitted only a skeleton organization. Until 1929 there has in general been but one Ranger in each County. This year, for the first time, a start was made in providing short-term assistants for the more heavily loaded Rangers, and in providing prevention patrol to a limited extent. This increased effort was made possible through additional State support, through increase in the Clarke-McNary allotment to California, and through greater cooperation extended by certain Counties and private owners. That these increases have been effectively used is borne out by the following comparison:

STATE FIRES OUTSIDE NATIONAL FOREST PROTECTION AREAS:

	1928	1929 up to 10/23
Number of fires	2728	2239
Approximate area burned over	1,180,796 A.	613,965 A.
" timber damage	$ 211,244	$ 103,076
No.large fires allowed to enter Nat'l.Forests	17	4
Inside area burned over as result of above large fires,	167,000 A.	12,000 A.

It is apparent that Clarke-McNary money is a very important factor not only in protecting privately-owned areas, but that it repays the Government in the additional protection provided along the National Forest boundaries.

The expenditures for protection of State and private areas need to be increased by at least 35 per cent to provide for additional assistant rangers, patrolmen, lookouts, lookout structures, firebreaks and fire-fighting equipment. The assistance rendered by the Federal Government is lagging far behind its obligation as set up in the Clarke-McNary law, as shown on the attached chart. The Federal allotment should be more than doubled.

Long season without precipitation.

High temperatures and low humidity; a normal condition every yea

Many communities openly favor light burning and are passive towa

The combined result of these factors is to make protection extremely
All years are bad fire years.

The funds provided for protection have permitted only a skeleton or-

through increase in the Clarke-McNary allotment to California, and th

	1928	1929 up to 10/1
mate area burned over - - - - - - - -	1,150,796 A. - - - -	612,905 A.
	167,000 A.	14,000 A.

he expenditures for protection of State and private areas need to be
at least 55 per cent to provide for additional seasonal rangers, p
ts, lookout structures, firebreaks and fire-fighting equipment. The
ndered by the Federal Government is lagging far behind the obligati
the Clarke-McNary law, as shown on the attached chart. The Federal
d be more than doubled.

COOPERATION WITH THE STATES IN FIRE CONTROL

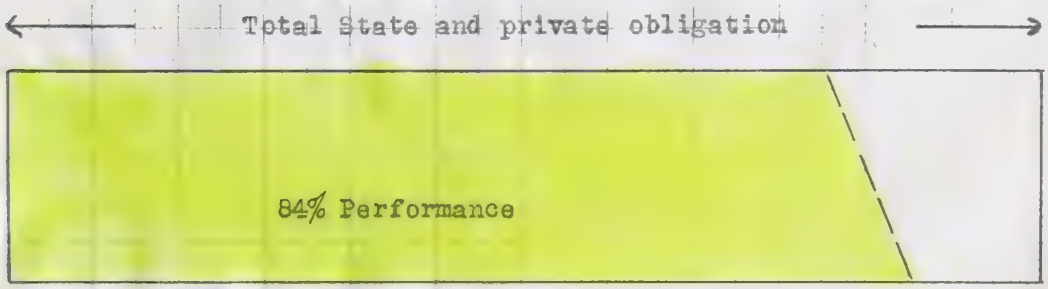
CLARKE-McNARY LAW - SECTION 2

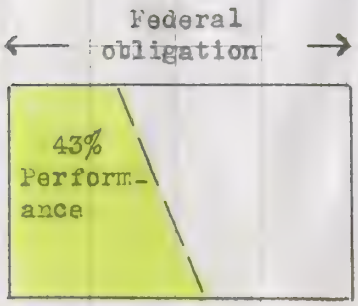
CALIFORNIA

Item	State and Private	Federal	Total
(1) Estimated Cost of Adequate Protection	(75%) $ 635 422	(25%) $ 211 807	$ 847 229
(2) Current Expenditures	533 785	90 427	624 212
Percentage of Performance	84%	43%	(average) 74%

(1) As revised in 1929.

(2) State and private expenditures estimated from budget for F.Y. 1930; Actual expenditures will exceed this figure, due to use of unbudgeted emeregency funds for fire suppression.





JHP 10/20/29

Why Insect Control Operations On National Forests Should Be On Emergency Expenditure Basis.

As illustrated by the history of the 1923-1928 infestation on the Modoc National Forest (Chart and statement attached), an insect epidemic in unburned timber starts gradually, requiring usually one year to reach large proportions. The field determination of the stage of insect infestation cannot be made until late summer or fall.

Under existing appropriation estimate procedure the Forester must submit his estimates of financial needs to the Secretary and to the Director of the Budget in July or August. These estimates are for the ensuing fiscal year, starting 10 or 11 months later and are based on field estimates which are still older. Thus the Forester's estimates are always one year and frequently two years behind the actual field needs, and the additional time required to make appropriations means in practice that epidemics develop and attain large proportions during the long period between recognition of the need by field officers and appropriation by the Congress.

When control work on a National Forest project is started, it is usually necessary to continue the work for two or more years in order to accomplish control of the epidemic. This means that in the meantime the regular appropriations for insect control are almost completely obligated and that it is impossible for the Forester to divert funds to new epidemics, which consequently reach a large size without any control work being done. For example, when control work was undertaken on the Kaibab epidemic, money could not be diverted to the early stages of the Modoc epidemic, and later, the concentration of control funds on the lodgepole epidemic in D-1 made it impossible to attack the Modoc situation even after it had developed into a serious epidemic.

The desirable and economical way to handle epidemics is at the very start, and in order to do this, authority to incur deficiency, as in fire control, appears to be the best method. Such authority would make it possible to catch insect outbreaks at the start, and gradually to control epidemic infestations.

The Young Socialist Association
in Solidarity Forums Should be
in Democratic Centralism Form

As illustrated by the history of the Trotskyist Internationals as the Fourth International Tenth was strengthened enormously, as Lenin explained to numerous Marxist study groups, regardless whether you may be young large proportions. The field experimentation of the stage of labour internationale cannot be made until late summer or fall.

Under existing organizational conditions the forerunner would submit his estimates of financial needs to the Secretary and to the Director of the Budget in July or August. These estimates are for the coming Fiscal year, starting in or 17 months later and are based on their activities which are still alive. This the International's estimates are always not yet formally the union behind the National Field Work, and the activities this requires to make organizations work in practice that organizations develop and study large propositions during the same period between recognition of the crisis by Trade activists and appropriations by the Congress.

This coming year as a National Forum project is started, it is usually necessary to postpone the work for two or more years to avoid be accomplish revival of the organizations. This years year is the complete the regular appropriations for Young Leaders are closed completely ab- Lighted and that it is impossible for the Congress to attract funds in new organizations, which consequently trail a large sum without are dem- ting work using funds. For example, some Marxist work has contributed on the future organizations among youth not to identify it the early stages of the young citizenship, and later, the organizations of student Union or the Independent students to let work it Congress- to submit the Union activities and later it had developed into a serious organization.

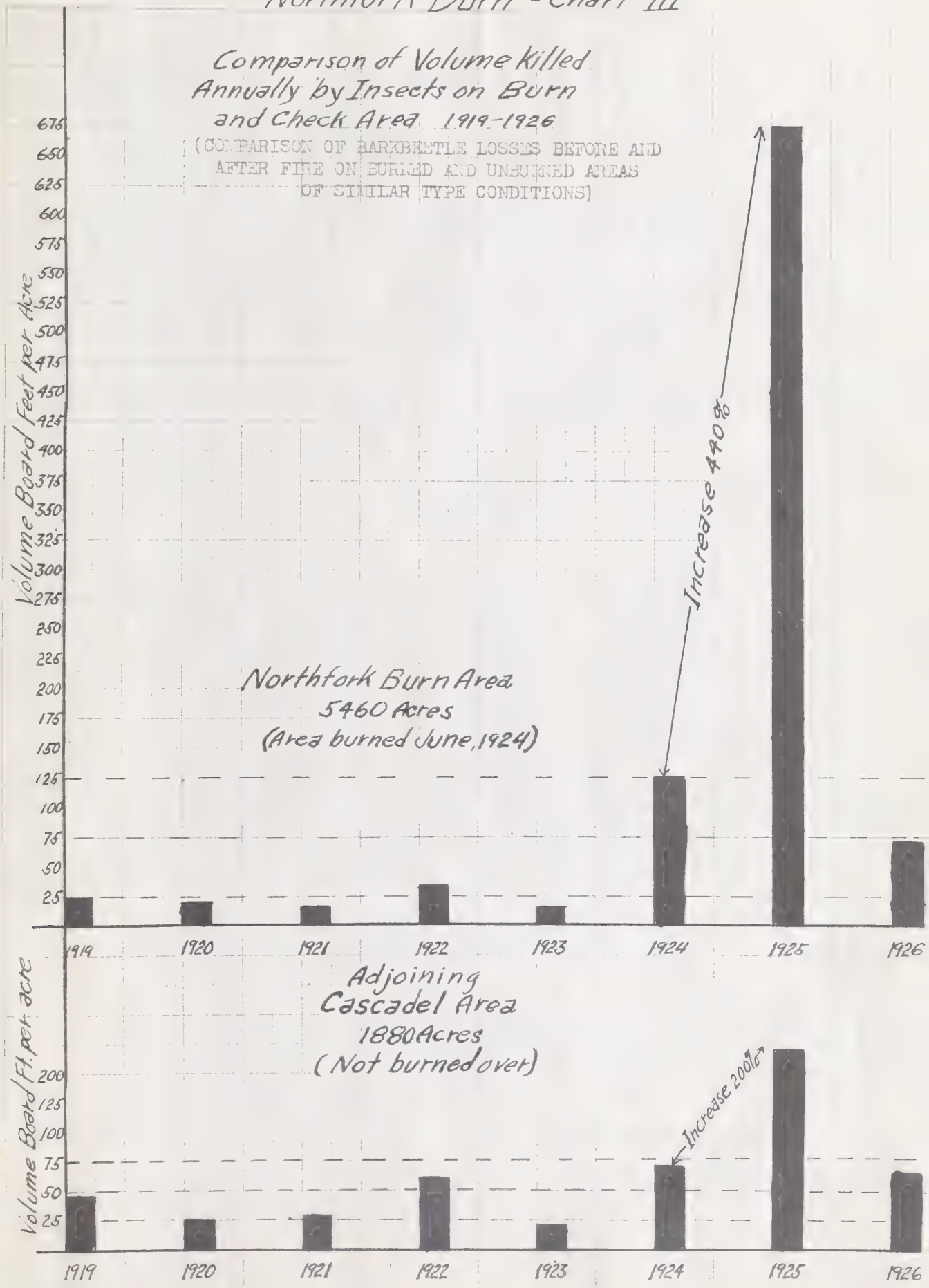
The activity and commitment was in Trotsky existence in at the very start, and in order to be long, authority to labor relations, on the international, growth to be the best method. Such authority needs this to provide to exist activities at the start, and probably in new and organizations International.

RELATIONSHIP BETWEEN

INSECTS and FIRE

History of the North Fork burn on the Sierra National Forest proves that fires increase insect losses thru killing fire injured trees after the burn. A detailed study showed that 76.9% of trees which lost from 24% to 75% of their crowns by scorching were killed by insects following the fire. The check area which was not run over by fire makes it certain that the insect losses following the fire on the other area were actually a result of the fire. Loss on burned area was 2-1/5 times as great the year after fire as loss on unburned area. The attached chart illustrates this very clearly.

Northfork Burn - Chart III



SUMMARY
HAPPY CAMP-LAVA BEDS AREA
MODOC NATIONAL FOREST

1. This area includes approximately 375,000 acres, originally bearing a stand of 5½ billion feet of merchantable yellow pine.

2. A high per cent of this timber is mature and ready to be cut. If held until milling operations are warranted by market conditions, it will yield a high return in stumpage prices.

3. Serious infestations of the western pine beetle were first reported in this area in 1921. Beginning with that year, continued annual surveys have shown the following seasonal losses for the entire area:

Year	Percent of Stand Killed	Volume, bd. ft. measure
1921	.72	40,030,000
1922	.58	32,485,000
1923	.30	16,610,000
1924	.59	33,140,000
1925	1.12	62,680,000
1926	2.04	115,200,000
1927	3.26	183,900,000
1928	2.38	134,000,000
Total	10.99	618,045,000

4. This loss was not evenly distributed over the area, but the greater part of it occurred in the more virulent centers within the area. On about 25,000 acres the loss ran as high as 14 per cent of the timber in 1927. In the heavier centers of infestation as high as 50 per cent of the total stand of timber has been killed.

5. Logging operations on a large scale have been started, mainly with the object of salvaging some of the recent losses and of harvesting the remaining timber before it is killed by the beetles.

6. A decline of the infestation started late in 1928 from natural causes, which was further aided by control work during the winter on about 18,000 acres where the worst centers existed. A further marked decline occurred in 1929 which will relieve the immediate pressure of the general situation.

7. A return of severe epidemic conditions may be expected at any time as long as the present conditions of the stand exist. Either effective control work or immediate harvesting of the timber appear to offer the only insurance against heavy losses.

/s/ J. M. MILLER
Senior Entomologist.

Palo Alto, Calif.
October 9, 1929.

[illegible]

1. [illegible] area involves approximately [illegible] acres, originally [illegible] a stand of [illegible] billion feet of merchantable yellow pine.

2. A high per cent of this timber is mature and ready to be [illegible]. If bold until milling operations are undertaken by market conditions, it will yield a high return in stumpage prices.

3. Serious infestations of the western pine beetle were first [illegible] in this area in 1921. Beginning with that year, continued aerial surveys have shown the following annual losses for the entire [illegible]:

[illegible]	[illegible]	[illegible]
1921	.72	[illegible]
1922	.95	[illegible]
1923	.95	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
1926	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

4. This loss was not evenly distributed over the area, but the greater part of it occurred in the more virulent centers within the area. In about [illegible] acres the loss was as high as [illegible] per cent of the timber in 1927. In the heaviest centers of infestation as high as [illegible] per cent of the total stand of timber has been killed.

5. Logging operations on a large scale have been started, mainly with the object of salvaging some of the recent losses and of [illegible] the remaining timber before it is killed by the beetles.

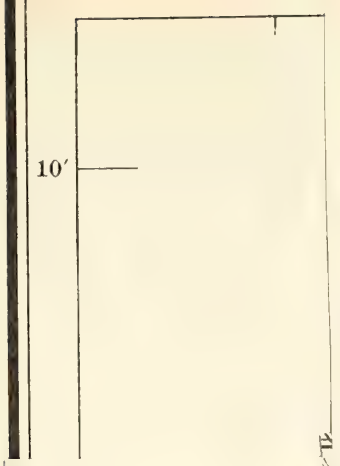
6. A decline of the infestation started late in 1928 from natural causes, which was further aided by control work during the winter [illegible] acres where the worst centers [illegible]. A [illegible] period occurred in 1929 which will relieve the [illegible] [illegible] of the general conditions.

7. [illegible] of [illegible] spruce [illegible] is [illegible] in the [illegible] area. Since [illegible] beetles were at [illegible] in the [illegible] [illegible] is [illegible] the only [illegible] spruce [illegible].

[illegible]

[illegible] DOCUMENTS.

[illegible] 1. [illegible]


10′

1. This area involves approximately [illegible] acres, originally [illegible] a stand of [illegible] billion feet of merchantable yellow pine.

2. A high per cent of this timber is mature and ready to be [illegible]. If held until milling operations are resumed by market conditions, it will yield a high return in stumpage prices.

3. Serious infestations of the western pine beetle were first [illegible] in this area in 1921. Beginning with that year, continued annual surveys have shown the following successive losses for the entire [illegible].

Year	Amount of [illegible]	Volume, M. [illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

4. This loss has not evenly distributed over the area, but the greater part of it occurred in the more virulent centers within the area. In about [illegible] acres the loss ran as high as 14 per cent of the timber in 1927. In the heavier centers of infestation as high as [illegible] per cent of the total stand of timber has been killed.

5. [illegible] operations on a large scale have been started, [illegible] the [illegible] of the [illegible] and [illegible] [illegible] timber [illegible] to be felled by the beetles.

6. A [illegible] of the [illegible] stands [illegible] [illegible] [illegible]

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
W. B. GREELEY, FORESTER

MODOC NATIONAL FOREST
CALIFORNIA
MT. DIABLO MERIDIAN
1927

Scale
1 ½ 0 1 2 3 4 5 6 Miles

LEGEND

HAPPY CAMP-LAVA BED AREA
MODOC NATIONAL FOREST, CALIFORNIA

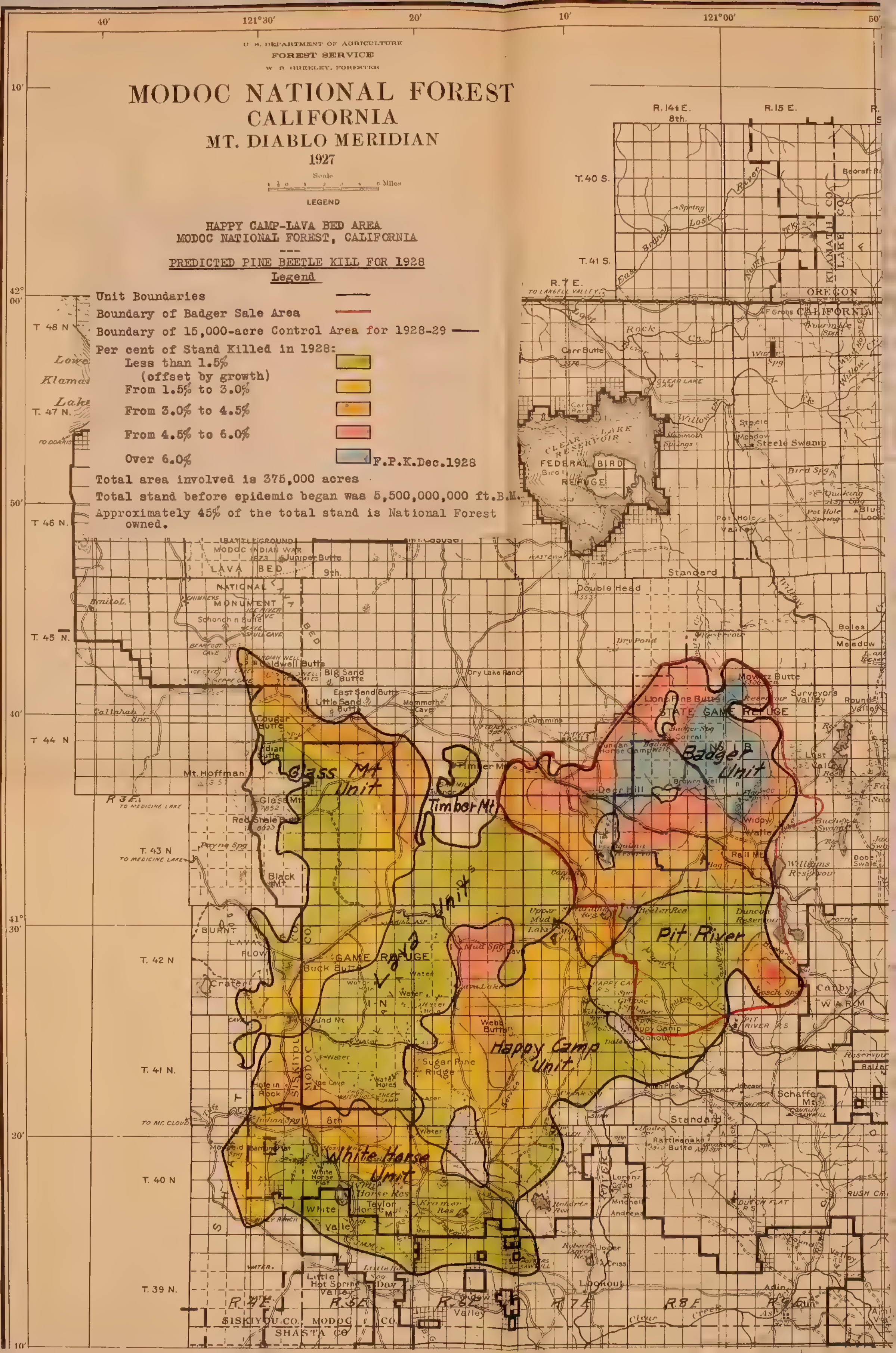
PREDICTED PINE BEETLE KILL FOR 1928

Legend

Unit Boundaries
Boundary of Badger Sale Area
Boundary of 15,000-acre Control Area for 1928-29
Per cent of Stand Killed in 1928:
- Less than 1.5% (offset by growth)
- From 1.5% to 3.0%
- From 3.0% to 4.5%
- From 4.5% to 6.0%
- Over 6.0%

F.P.K.Dec.1928

Total area involved is 375,000 acres
Total stand before epidemic began was 5,500,000,000 ft.B.M.
Approximately 45% of the total stand is National Forest owned.

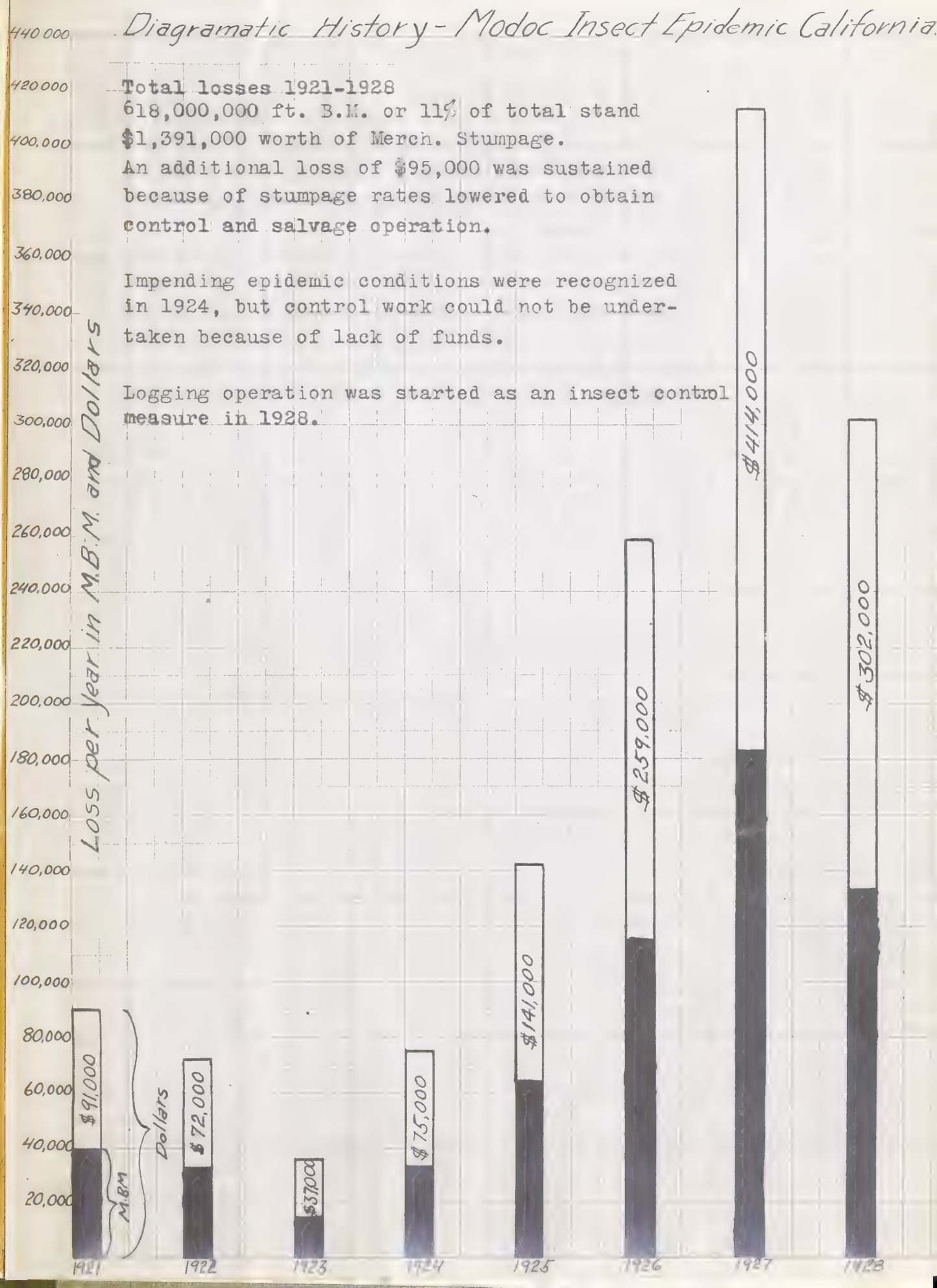


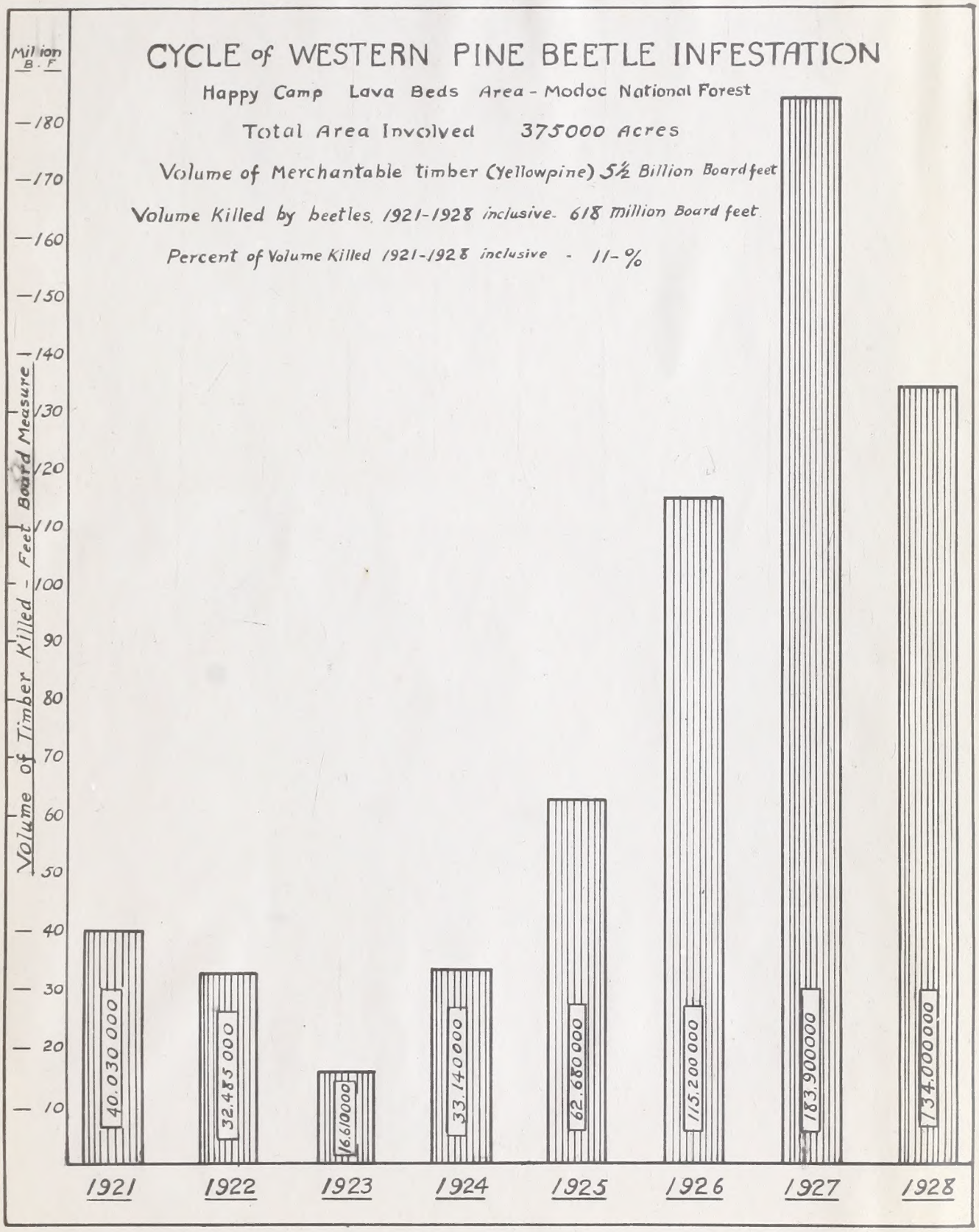
Diagramatic History - Modoc Insect Epidemic California

Total losses 1921-1928
618,000,000 ft. B.M. or 11% of total stand
$1,391,000 worth of Merch. Stumpage.
An additional loss of $95,000 was sustained because of stumpage rates lowered to obtain control and salvage operation.

Impending epidemic conditions were recognized in 1924, but control work could not be undertaken because of lack of funds.

Logging operation was started as an insect control measure in 1928.




CYCLE of WESTERN PINE BEETLE INFESTATION
Happy Camp Lava Beds Area - Modoc National Forest
Total Area Involved 375000 Acres
Volume of Merchantable timber (Yellowpine) 5½ Billion Board feet
Volume Killed by beetles, 1921-1928 inclusive- 618 Million Board feet
Percent of Volume Killed 1921-1928 inclusive - 11-%
Million B.F.
Volume of Timber Killed - Feet Board Measure
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
40.030 000
32.485 000
16.610000
33.140000
62.680000
115.200000
183.900000
134.000000
1921
1922
1923
1924
1925
1926
1927
1928

J.M.M.